

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: INVUE

Report Number: P367817

Luminaire Tested: **MSA-SA3B-730-U-SL4-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367817  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3B-730-U-SL4-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11072 lumens  
Efficiency: N/A  
Efficacy: 87.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3

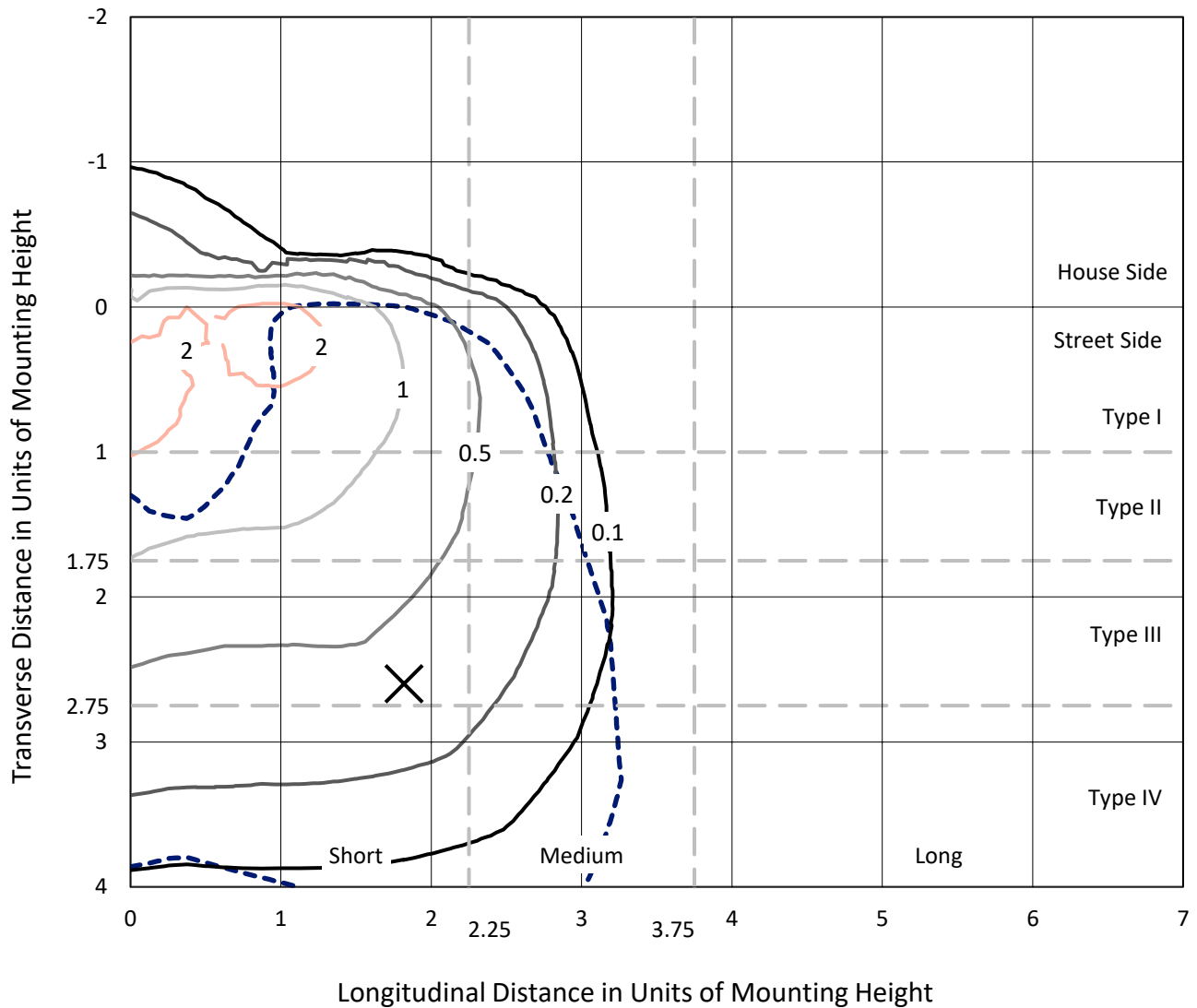
Input Watts (W): 126  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

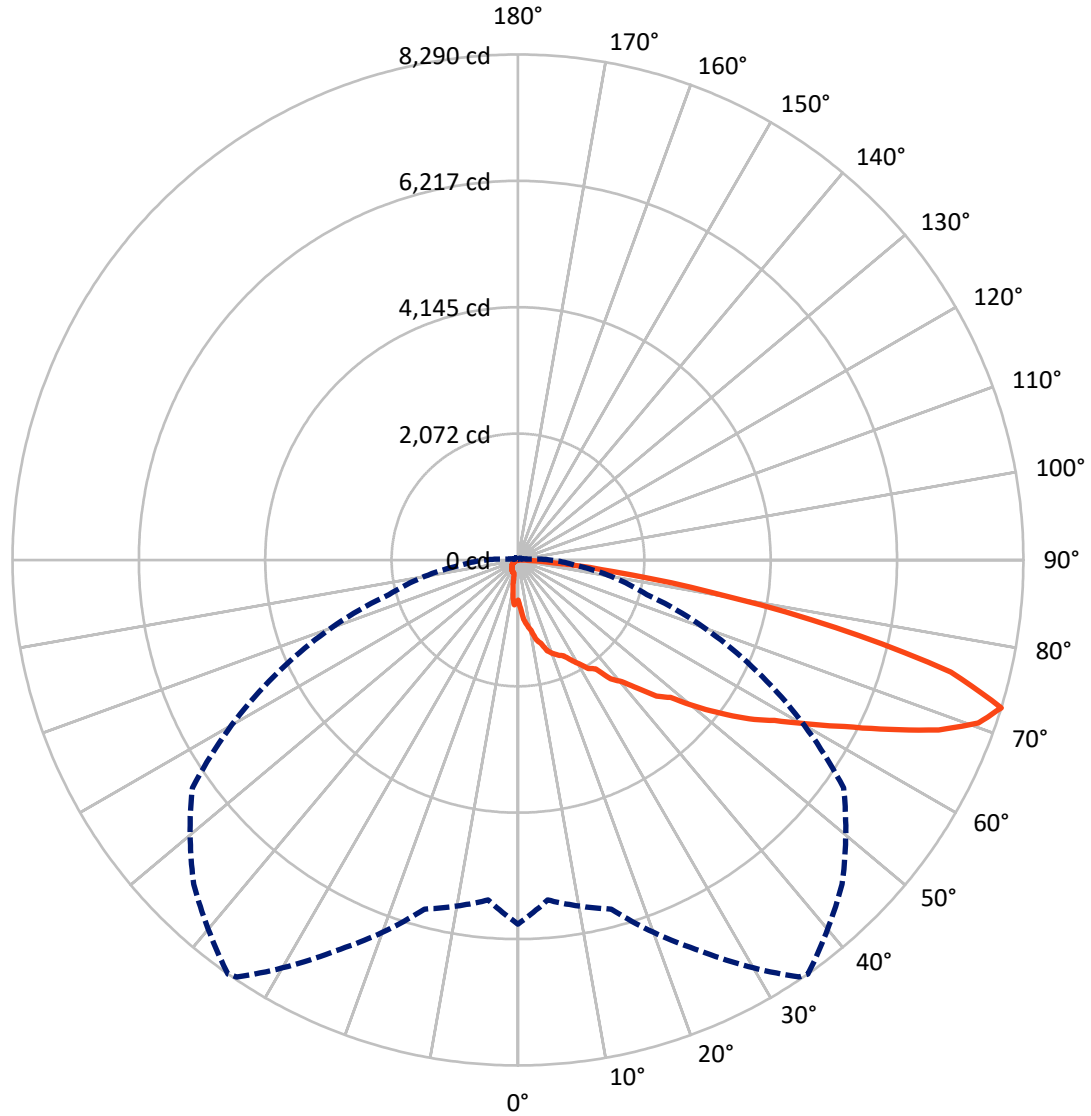
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.5 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 863.6    | 0.0    | 863.6   |
|                    | % Fixture | 7.8      | 0.0    | 7.8     |
| <b>Street Side</b> | Lumens    | 10208.4  | 0.0    | 10208.4 |
|                    | % Fixture | 92.2     | 0.0    | 92.2    |
| <b>Total</b>       | Lumens    | 11072.0  | 0.0    | 11072.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 84.1    | 0.8       |
| 10°-20°   | 283.4   | 2.6       |
| 20°-30°   | 516.0   | 4.7       |
| 30°-40°   | 890.1   | 8.0       |
| 40°-50°   | 1582.2  | 14.3      |
| 50°-60°   | 2361.0  | 21.3      |
| 60°-70°   | 3016.5  | 27.2      |
| 70°-80°   | 2098.7  | 19.0      |
| 80°-90°   | 240.1   | 2.2       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 11072.0 | 100.0     |
| 0°-180°   | 11072.0 | 100.0     |

**Coefficient of Utilization**



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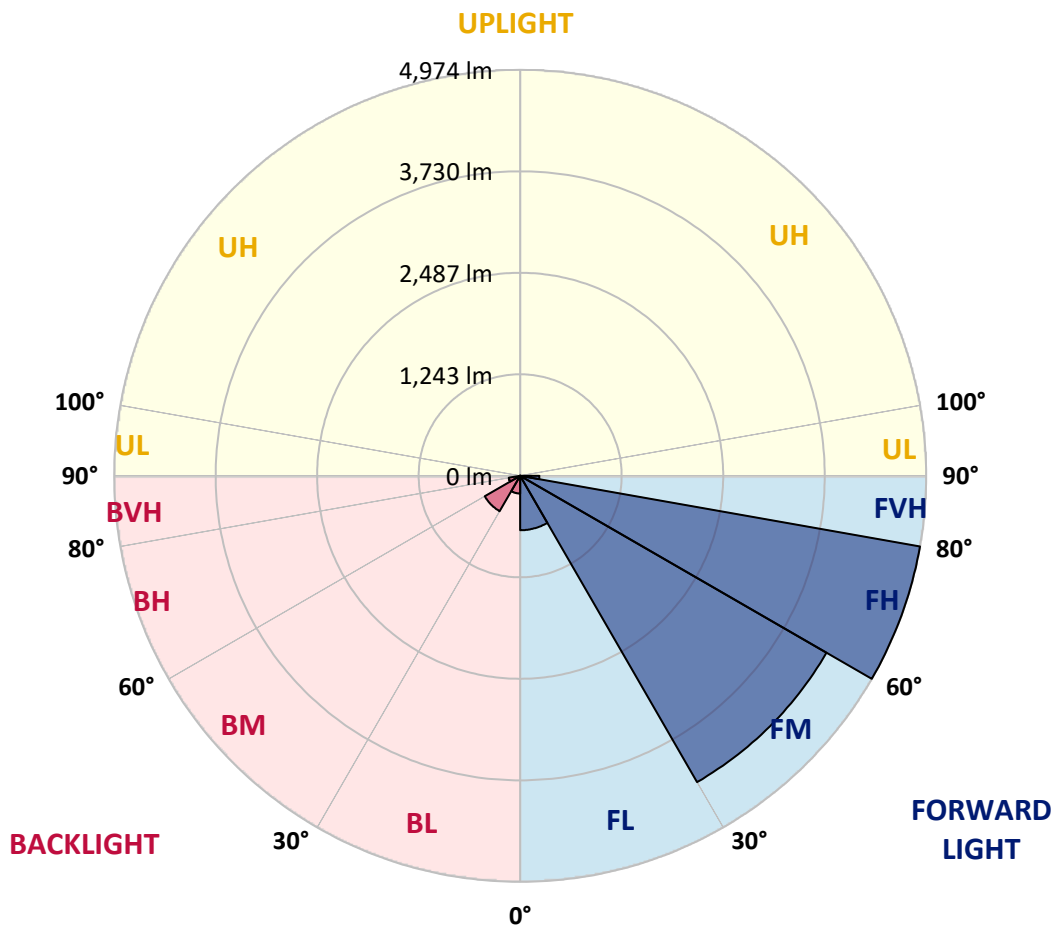
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 666.3  | 6.0       |                         |      |         |
| FM (30°-60°)   | 4332.5 | 39.1      |                         |      |         |
| FH (60°-80°)   | 4973.6 | 44.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 236.0  | 2.1       |                         |      | G3/500  |
| BL (0°-30°)    | 217.2  | 2.0       | B1/500                  |      |         |
| BM (30°-60°)   | 500.8  | 4.5       | B1/1000                 |      |         |
| BH (60°-80°)   | 141.6  | 1.3       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 4.0    | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 34°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  | 659.6  |
| 2.5°  | 839.3  | 806.5  | 753.1  | 757.0  | 780.9  | 785.9  | 793.1  | 774.2  | 757.5  | 728.0  | 785.3  |
| 5°    | 1075.3 | 1028.0 | 998.0  | 988.5  | 974.6  | 975.7  | 941.7  | 954.0  | 950.7  | 972.4  | 998.5  |
| 7.5°  | 1208.4 | 1182.2 | 1144.3 | 1133.8 | 1082.6 | 1077.0 | 1035.3 | 1091.5 | 1097.0 | 1089.2 | 1132.1 |
| 10°   | 1261.2 | 1226.7 | 1231.2 | 1191.7 | 1166.1 | 1172.7 | 1179.4 | 1183.9 | 1191.1 | 1198.3 | 1146.0 |
| 12.5° | 1292.4 | 1298.5 | 1359.2 | 1318.0 | 1343.6 | 1343.6 | 1388.7 | 1340.8 | 1342.5 | 1290.2 | 1299.1 |
| 15°   | 1432.7 | 1466.6 | 1439.3 | 1438.8 | 1411.0 | 1418.2 | 1470.5 | 1432.7 | 1452.1 | 1436.6 | 1376.4 |
| 17.5° | 1608.5 | 1615.2 | 1563.5 | 1540.6 | 1565.7 | 1566.2 | 1544.0 | 1542.3 | 1474.4 | 1589.1 | 1516.1 |
| 20°   | 1664.8 | 1702.6 | 1629.1 | 1540.1 | 1644.2 | 1639.2 | 1637.5 | 1611.3 | 1498.3 | 1657.5 | 1597.4 |
| 22.5° | 1817.8 | 1763.8 | 1713.7 | 1655.3 | 1695.9 | 1695.9 | 1689.8 | 1632.5 | 1588.5 | 1651.4 | 1677.0 |
| 25°   | 1865.7 | 1872.4 | 1807.2 | 1788.3 | 1789.4 | 1739.3 | 1734.9 | 1710.4 | 1668.1 | 1775.5 | 1724.3 |
| 27.5° | 2030.4 | 2027.7 | 1871.3 | 1924.1 | 1856.8 | 1857.3 | 1734.3 | 1789.4 | 1796.7 | 1781.6 | 1839.0 |
| 30°   | 2192.4 | 2237.5 | 2001.5 | 2068.3 | 1997.6 | 1976.4 | 1856.2 | 1905.2 | 1918.0 | 1900.8 | 1973.1 |
| 32.5° | 2398.9 | 2465.1 | 2235.8 | 2170.1 | 2062.2 | 2122.3 | 2039.3 | 1923.6 | 1987.0 | 2141.2 | 2181.8 |
| 35°   | 2617.6 | 2649.9 | 2405.6 | 2313.7 | 2191.8 | 2191.3 | 2188.5 | 2198.0 | 2268.1 | 2441.8 | 2476.3 |
| 37.5° | 3010.6 | 2934.3 | 2713.4 | 2503.0 | 2530.3 | 2469.6 | 2427.3 | 2471.8 | 2544.7 | 2830.8 | 2978.3 |
| 40°   | 3229.9 | 3174.8 | 2863.6 | 2739.0 | 2603.7 | 2626.0 | 2740.6 | 2735.6 | 2929.9 | 3229.3 | 3450.3 |
| 42.5° | 3443.1 | 3390.7 | 3084.6 | 2983.9 | 2810.2 | 2870.9 | 2921.0 | 2984.4 | 3382.4 | 3865.5 | 3986.8 |
| 45°   | 3632.9 | 3479.2 | 3263.3 | 3267.2 | 3177.0 | 3184.2 | 3272.7 | 3331.2 | 3906.7 | 4402.1 | 4487.2 |
| 47.5° | 3747.5 | 3621.2 | 3414.1 | 3410.2 | 3404.7 | 3370.7 | 3787.6 | 3841.0 | 4324.7 | 4913.0 | 4920.8 |
| 50°   | 3908.9 | 3750.9 | 3569.4 | 3572.7 | 3701.3 | 3773.1 | 4270.7 | 4265.1 | 4728.2 | 5339.4 | 5159.6 |
| 52.5° | 4109.9 | 3916.7 | 3716.9 | 3865.5 | 4064.2 | 4181.1 | 4585.2 | 4749.9 | 5161.8 | 5607.1 | 5253.1 |
| 55°   | 4367.0 | 4125.4 | 3932.9 | 4123.2 | 4556.8 | 4601.9 | 4893.0 | 5240.8 | 5634.3 | 5880.4 | 5283.1 |
| 57.5° | 4668.7 | 4380.4 | 4224.5 | 4531.2 | 4963.7 | 4964.8 | 5341.0 | 5764.0 | 5924.3 | 5991.7 | 5249.2 |
| 60°   | 4993.7 | 4657.5 | 4500.6 | 4776.6 | 5412.3 | 5457.9 | 5839.2 | 6052.9 | 6218.8 | 6047.9 | 5188.5 |
| 62.5° | 5279.8 | 4908.6 | 4786.7 | 5111.2 | 5904.3 | 6012.3 | 6273.3 | 6242.7 | 6431.4 | 6118.6 | 5034.3 |
| 65°   | 5620.4 | 5233.6 | 5153.5 | 5632.7 | 6546.6 | 6695.2 | 6760.9 | 6579.4 | 6502.6 | 6064.0 | 4633.0 |
| 67.5° | 5957.7 | 5595.9 | 5593.7 | 6211.0 | 7388.7 | 7439.9 | 7370.9 | 7054.2 | 6419.7 | 5583.1 | 3897.8 |
| 70°   | 6195.4 | 5806.9 | 5953.3 | 6844.4 | 8154.0 | 8010.4 | 7719.9 | 7278.5 | 5820.8 | 4279.1 | 2546.4 |
| 72.5° | 5972.2 | 5597.6 | 5927.7 | 7069.8 | 8248.6 | 8289.8 | 7517.8 | 6519.9 | 4324.7 | 2188.5 | 921.7  |
| 75°   | 4538.4 | 4309.1 | 5146.8 | 6272.2 | 7323.6 | 7333.1 | 6275.0 | 4598.5 | 2129.5 | 594.4  | 254.9  |
| 77.5° | 2285.9 | 2213.0 | 3257.7 | 4452.7 | 5343.3 | 5327.7 | 4311.3 | 2463.5 | 685.2  | 197.6  | 128.6  |
| 80°   | 1157.1 | 1098.7 | 1386.5 | 2402.2 | 3173.1 | 3196.5 | 2461.8 | 1103.2 | 345.6  | 107.4  | 89.1   |
| 82.5° | 710.8  | 674.6  | 758.6  | 1087.0 | 1540.1 | 1577.4 | 934.0  | 698.5  | 214.3  | 63.5   | 81.3   |
| 85°   | 137.5  | 144.7  | 435.8  | 544.3  | 615.0  | 600.6  | 276.6  | 575.0  | 64.6   | 37.8   | 59.0   |
| 87.5° | 0.0    | 2.2    | 100.7  | 177.6  | 178.1  | 158.1  | 62.9   | 127.5  | 8.9    | 10.6   | 7.2    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 659.6  | 659.6  | 659.6  | 659.6 | 659.6 | 659.6 | 659.6 | 659.6 | 659.6 | 659.6 | 659.6 |
| 2.5°  | 794.8  | 786.5  | 716.9  | 709.1 | 710.8 | 699.1 | 695.2 | 670.7 | 664.6 | 702.4 | 709.1 |
| 5°    | 987.4  | 931.7  | 867.2  | 843.8 | 807.6 | 746.4 | 737.5 | 721.9 | 704.6 | 711.3 | 706.3 |
| 7.5°  | 1105.4 | 1031.4 | 962.3  | 839.3 | 737.5 | 648.4 | 634.0 | 607.2 | 580.5 | 581.1 | 598.3 |
| 10°   | 1124.3 | 1062.0 | 966.8  | 817.1 | 700.7 | 589.4 | 492.6 | 422.5 | 390.7 | 362.3 | 370.7 |
| 12.5° | 1234.0 | 1176.1 | 1000.7 | 810.4 | 647.3 | 473.7 | 346.8 | 278.3 | 248.2 | 238.2 | 237.1 |
| 15°   | 1321.9 | 1276.3 | 1058.6 | 789.8 | 528.8 | 333.4 | 248.2 | 228.2 | 222.6 | 232.1 | 229.3 |
| 17.5° | 1452.7 | 1370.3 | 1052.5 | 704.6 | 403.0 | 253.2 | 228.8 | 226.0 | 232.7 | 238.2 | 239.9 |
| 20°   | 1510.0 | 1391.5 | 1010.8 | 571.1 | 301.7 | 232.1 | 223.2 | 217.6 | 229.9 | 246.6 | 243.2 |
| 22.5° | 1567.9 | 1427.6 | 961.8  | 467.5 | 242.7 | 222.1 | 217.1 | 212.6 | 222.1 | 238.2 | 242.1 |
| 25°   | 1594.1 | 1485.5 | 907.2  | 365.1 | 225.4 | 210.4 | 207.1 | 208.7 | 216.5 | 231.0 | 229.3 |
| 27.5° | 1726.0 | 1492.2 | 803.2  | 288.3 | 218.2 | 202.0 | 202.0 | 205.9 | 205.9 | 225.4 | 223.7 |
| 30°   | 1808.4 | 1605.2 | 718.6  | 242.7 | 209.8 | 190.4 | 197.0 | 198.7 | 195.9 | 217.1 | 218.7 |
| 32.5° | 1953.1 | 1636.4 | 636.2  | 222.6 | 196.5 | 188.7 | 187.6 | 188.7 | 190.9 | 211.5 | 212.1 |
| 35°   | 2175.7 | 1790.0 | 523.7  | 214.8 | 189.8 | 180.3 | 172.5 | 178.7 | 184.2 | 199.3 | 202.0 |
| 37.5° | 2611.0 | 1947.5 | 426.9  | 208.7 | 186.5 | 172.5 | 169.8 | 168.6 | 178.7 | 195.9 | 201.5 |
| 40°   | 2963.3 | 2226.4 | 347.3  | 203.7 | 179.8 | 168.1 | 160.9 | 161.4 | 170.3 | 183.1 | 191.5 |
| 42.5° | 3462.0 | 2427.8 | 294.4  | 195.9 | 170.3 | 158.6 | 150.3 | 155.3 | 159.2 | 172.5 | 178.1 |
| 45°   | 3878.3 | 2584.2 | 259.4  | 190.9 | 160.9 | 149.7 | 143.0 | 148.6 | 144.7 | 151.4 | 159.2 |
| 47.5° | 4209.5 | 2720.6 | 233.2  | 178.7 | 154.7 | 144.7 | 136.4 | 134.7 | 128.0 | 129.7 | 136.9 |
| 50°   | 4391.5 | 2697.8 | 211.5  | 166.4 | 146.9 | 139.7 | 128.0 | 116.3 | 107.4 | 106.9 | 111.3 |
| 52.5° | 4456.0 | 2575.9 | 193.7  | 155.8 | 137.5 | 128.6 | 115.2 | 99.1  | 90.2  | 87.4  | 91.3  |
| 55°   | 4473.9 | 2400.6 | 177.6  | 144.2 | 128.6 | 114.7 | 100.7 | 83.5  | 74.0  | 69.6  | 73.5  |
| 57.5° | 4416.0 | 2130.6 | 162.0  | 133.0 | 118.0 | 101.3 | 86.3  | 68.5  | 59.6  | 54.0  | 57.3  |
| 60°   | 4272.9 | 1787.8 | 148.1  | 119.1 | 106.9 | 89.6  | 72.9  | 55.1  | 45.6  | 40.6  | 42.3  |
| 62.5° | 3956.2 | 1401.5 | 133.0  | 106.3 | 95.2  | 78.5  | 61.2  | 43.4  | 34.5  | 30.1  | 30.6  |
| 65°   | 3474.2 | 1044.7 | 115.8  | 94.1  | 84.6  | 67.9  | 49.0  | 33.4  | 26.2  | 22.3  | 21.7  |
| 67.5° | 2767.9 | 708.0  | 98.5   | 81.3  | 75.1  | 57.3  | 39.0  | 26.2  | 20.6  | 17.8  | 16.7  |
| 70°   | 1626.9 | 356.8  | 81.8   | 70.1  | 64.6  | 47.9  | 30.6  | 21.2  | 18.9  | 16.7  | 15.6  |
| 72.5° | 536.6  | 154.2  | 64.0   | 57.9  | 53.4  | 38.4  | 23.9  | 19.5  | 18.4  | 16.1  | 15.0  |
| 75°   | 187.0  | 89.1   | 47.3   | 44.5  | 42.3  | 28.9  | 20.0  | 17.8  | 17.8  | 15.6  | 13.9  |
| 77.5° | 122.4  | 69.0   | 35.1   | 32.3  | 31.7  | 21.2  | 17.3  | 16.7  | 15.6  | 12.8  | 10.6  |
| 80°   | 101.9  | 39.0   | 24.5   | 22.8  | 22.3  | 13.4  | 13.9  | 12.2  | 9.5   | 5.6   | 2.2   |
| 82.5° | 94.1   | 23.4   | 12.8   | 13.9  | 12.8  | 5.0   | 7.8   | 6.7   | 5.0   | 2.2   | 0.0   |
| 85°   | 55.1   | 10.6   | 7.2    | 7.2   | 5.6   | 1.1   | 3.9   | 3.9   | 2.2   | 0.6   | 0.0   |
| 87.5° | 6.1    | 5.0    | 3.9    | 3.9   | 2.8   | 0.0   | 1.7   | 1.1   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)